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| APPLICATION NO.                | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|----------------------|---------------------|------------------|
| 10/052,964                     | 01/17/2002  | John M. Cioffi       | TI-27725.4          | 3957             |
| 23494                          | 7590        | 09/06/2005           | EXAMINER            |                  |
| TEXAS INSTRUMENTS INCORPORATED |             |                      | HSU, ALPUS          |                  |
| P O BOX 655474, M/S 3999       |             |                      | ART UNIT            |                  |
| DALLAS, TX 75265               |             |                      | PAPER NUMBER        |                  |

2665

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/052,964

Applicant(s)

CIOFFI ET AL.

Examiner

Alpus H. Hsu

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 40,41 and 53-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40 and 41 is/are allowed.
- 6) ☒ Claim(s) 53-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2665

1. The indicated allowability of claims 53-55 after terminal properly filed is withdrawn in view of the newly discovered reference(s) to SPERLICH in view of HUNT et al.. Rejections based on the newly cited reference(s) follow.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over SPERLICH in U.S. Patent No. 4,644,534 (of record) in view of HUNT et al. in U.S. Patent No. 5,400,322 (newly cited).

Regarding claim 53, SPERLICH discloses a method of transmitting data in a bi-directional data transmission system that facilitates communications between a plurality of remote units (U1-U4) and a central unit (Z), by a) transmitting at least one frame of downstream data from the central unit to at least one of the remote units, wherein no upstream data transmissions are permitted during the transmission of the downstream data, b) transmitting at

Art Unit: 2665

least one frame of upstream data from at least one of the remote units to the central unit, wherein no downstream data transmissions are permitted during the transmission of the upstream data, and sequentially repeating steps a) and b) (see col. 2, line 47 to col. 3, line 8, col. 3, lines 47-56).

SPERLICH differs from the claim, in that, it fails to disclose the data transmission is utilizing a frame based discrete multi-tone modulation scheme and a multiplicity of discrete sub-channels, which is well known in the art and commonly used in data communications field for maximizing the bandwidth allocation.

HUNT et al., for example, from the similar field of endeavor, teaches the use of frame based discrete multi-tone modulation scheme and a multiplicity of discrete sub-channels for data transmission, which can be easily adopted by one of ordinary skill in the art into the method and system of SPERLICH to further improve the system reliability and efficiency.

Regarding claim 54, SPERLICH discloses the step of providing a settling period after transmission of at least one of the downstream frame and the upstream frame, wherein no transmissions are made in either direction during the settling period (see col. 3, lines 9-16).

Regarding claim 55, although SPERLICH fails to specifically disclose the data transmission rate of the downstream data transmission being at least ten million bits per second, it would have been obvious for one of ordinary skill in the art to implement the same data transmission rate in SPERLICH since it is well within the level of ordinary skilled artisan to adjust the data transmission rate in any desired form to fulfill the system specification and requirement.

5. Claims 40 and 41 are allowed.

Art Unit: 2665

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

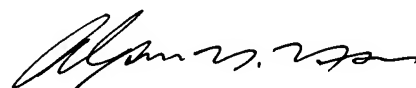
7. Rybicki et al., Johnson et al. and Bell are further cited to show the common feature of data transmission between central unit and remote stations utilizing multi-carrier transmission scheme similar to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHH



Alpus H. Hsu  
Primary Examiner  
Art Unit 2665